SOME NEW BOOKS. Great Modern Commanders

In a large octavo volume entitled. Great Com manders of Modern Times, Mr. WILLIAM O'CON-non Monnis has republished a series of essays which originally appeared in the *litustrated*Naval and Military Magazine. When a civilian
attempts to treat of military affairs he may expect to be reminded of the remark of Han-nibal to the Greek sophist: "It is pretty, but it is a', nonsense." Mr. Morris is not a soldier, but geither is Mr. John C. Ropes, who is, nevar', neless, regarded as one of the most authoriative of living critics on the campaigns of Napoleon. It is certain that the papers before us are worth reading, even if the author has not attained a mastery of technical details.

The names included in Mr. Morris's list of

modern great commanders are those of Turepne, Marlborough, Frederick the Great, Napoeon, Wellington, and Moltke. Admitting that no list would be complete without Turenne and Marlborough, many will nevertheless ask why the names of Gustavus Adolphus, the Prince de Condé, and Prince Eugéne, and perhaps we might add, of Cromwell, are not included. It is well known that Napoleon's own list comprehended Alexander, Hannibal Julius Cosar, Gustavus Adolphus, Turenne, Prince Eugéne, and Frederick the Great; the Prince de Condé. and still more strangely, Mariborough, being omitted. It was, we see, the opinion of Na-poleon, as it is that of the biographers of Gustayus, that the Swedish King was the true of modern strategy and the first really great General since Julius Cæsar. Not only was Gustavus a consummate strategist, but the tactical improvements introduced by him were extensive; his reforms in the armament and equipment of his soldiers were remarka-ble, and he was the first to enforce upon his troops the discipline and self-restraint which

have become as pital factures of modern armies As regards the difference between Turenne and Conds. Mr. Morris admits that the former had not the latter's sudden inspirations on the field, and that, moreover, Condá, when op-posed to Turenne, was repeatedly baffled by the obstinacy of his Spanish coadjutors. It is also acknowledged that for a commander of extraordinary gifts Turenne suffered defeat In many instances, but it was one of his special characteristics that he was most formidable after a reverse of fortune. There is no doubt that he remodelled the military organization of France and made it by far the best in Europe, that he possessed administrative powers of the highest order, and that no Gen eral ever had more completely the secret evoking the devotion of his officers and men. There, are in the history of war few more striking instances of what a commander may be to his troops than the series of misfortunes which, after the fall of Turenne, succeeded his stendy success fore it. The passionate outery of his defeated soldiery to the worthless men who ocrupied his place, "Give us Magpie"-Tu-renne's charger-"to lead us!" was only an expageration of the truth. It is as natural that an Englishman should

set Mariborough above Prince Eugéne as it was that Napoleon, with a regard to the susceptibilities of Frenchmen, should express an opposite opinion. The fact is indisputable that Marlborough was never defeated in a pitched battle, whereas, in 1712, when Engand had withdrawn from the Grand Alliance Prince Eugéne was utterly routed by Marshal Villars, and driven beyond the Rhine. Yet, although Prince Eugene made in this campaign a strategic mistake which had disastrous consequences. Mr. Morris concedes that upon the whole he achieved more than Mariborough in this sphere of the military art. We must go to the field of battle to behold the genius of Mariborough in its highest perfection, for, although he may have been equal as a tactician, he has never been surpassed Eugéno could show no masterpiece of purely faction skill like Bamillies. Then, again Mariborough, like all Generals of the first order, was a great leader of men. "Corporal John" was as adored by his soldiers as was to be the "Little Corporal" of a succeeding age. For the author's views of Frederick the Circat, Napoleon, Wellington, and Moltke we must refer the reader to the book itself. We will only say as regards the account of the campaign which ended at Waterloo, that while Mr. Morris does justice to the great qualities displayed by Wellington and Bluche as soldiers, be describes Napoleon as easily superior in respect of strategy to his adverraries. Indeed, he does not hesitate to shock England's vanity by dwelling on the strategic

mirtakes which Wellington committed.

The fourth volume of the Memoirs of the Prince de Talleyrand, an English translation of which is being published by the Putnams deals exclusively with the results of the revolution of 1830 in Belgium. We need not re post what has been said in the reviews of the former installments of this work about the cloud cast on its authenticity by the editor's fallure to produce the original manuscript None of the explanations offered suffices to make good this fundamental shortcoming The suspicion, however, that the previous custodisn of the papers, M. De Bacourt, dealt with them pretty much as he liked need not seriously trouble the reader of the present vol ume, whose materials, consisting largely of etters botween Talleyrand and other diplomatists, must be capable of verification in the ar phives of European foreign offices.

The political situation in which Talleyrand was a conspicuous figure during the period covered by the present volume was as follows: The deposition of Charles X. and Louis Philippe's assumption of the title of King of the French had with good reason alarmed the powers which had asserted reactionary prin ciples at the Congress of Vienna. The shock caused by the French revolution of 1830 had been felt all over central and southern Europe and especially in Belgium, which repudiated its compulsory union with Holland. The Belgians had been French subjects under the Napoleonic régime, and many of them were desirous of reverting to that status. The party dominant in Brussels would have preferred complete incorporation with France, but if that should prove impracticable they wanted to make one of the sons of Louis Philippe King of the Belgians. The wish expressed by Bel gium had of course the ardent sympathy of the French people, which, however, found inadequate expression in the Legislature and Ministry, owing to the restrictions of the franchise. There is no doubt, however, that Louis Philippe would have annexed Beigium had he dared, but the first overt step in that direction would have provoked armed resistance on the part of the reactionary powers, whose policy was moulded by Czar Nicholas and Metternich. Nevertheless, if England could have been persuaded to side with France, the latter country would probably have confronted the chances of a European war. What would England do—that was the great question in 1831, and it forms the subject of the corredence in this volume between Gen. Sebastini the French Minister for Foreign Affairs and Talleyrand, the French Ambassador at the court of St. James. As it is well known, the Belgian problem was uitimately solved by an agreement be-tween Francé and England that the new crown should be given to Prince Leopoid of Saxe-Coburg-Gotha, and that a marriage uld be arranged between him and the eldest daughter of Louis Philippe. This solution was mainly due to Talleyrand, who never wavered in his preference for Prince Leopold and who considered the separation of Belgium from Holland of greater importance to France than the choice of a sovereign. There is indeed no doubt that the French gained great dvantages by the substitution of two weak powers for one strong power on their north-east frontier, by the neutralization of Belgium

Another outcome of the Paris revolution of 1830 had been the Polish insurrection, and the at victories of the Poles in Lithuania ex-

Belgian fortresses.

and by the domolition of a certain number of

cited great sympathy in France. It is an in-teresting fact that Talleyrand tried to arouse interest in England in favor of the Poles, but he was met by coldness and opposition. Not only were the Torics unfavorable to Poland, but Lord Grey, the Whig Minister, influenced by Mme. de Lieven, sought for pretexts to avoid all intervention on the part of England in a cause that was looked upon as doomed. One should give every man his due, and we suppose that Talleyrand must be credited with a sin-cere and abiding liking for the Foles. We are reminded in these memoirs of the efforts that he made in 1807, and again at the Congress of Vienna in 1815, for the resuscitation of their nationality.

Talleyrand had his share of opposition and

annovances in England. As the representative of Louis Philippe he could no longer count on the political support of his Tory acquaintances, who regretted the blow given by the revolution of 1830 to the system established by the Congress of Vienna. On the other hand, the cooperation of the Whigs, who were then in power, was lukewarm and unstable. We have referred to the influence exerted over Lord Grey by Mms. de Lieven, but Lord Palmerston also was alienated from Talleyrand by a caricature entitled "The lame leading the blind." It was severtheless at this very period that a remarkable public tribute of respect was paid to Talleyrand, considered as a patriot and as a gentleman. There can scarcely have been a more flattering incident in the whole course of his life than that which occurred in the House of Lords on Sept. 29, 1831. On that day the Marquis of Londonderry, a broth-er of the deceased Lord Castlercagh and a member of the Tory opposition, described Talleyrand, in a speech directed against France, as a "crafty" diplomatist, and declared that he did not think another such character could be found in the whole world. After pointing out that Talleyrand had been suc-XVIII., and of Charles X., Lord Londonderry declared that when one saw the English Min isters going one after the other to consult such a person, one was naturally filled with diagust. a person, one was naturally filled with diagust. These aspersions were repelled not only by Lord Holland, a member of the Whig Ministry, but also by the Duke of Wellington, the head of the Bory opposition. Lord Holland said that forty years' acquaintance with Taileyrand enabled him to bear testimony to the fact that, although those forty years had been passed during a tim - pecu liarly frought with calumnies of every description, no man's private character had been more shamefully traduced and no man's public character more mistaken and misropresented than the private and public character of Prince de Talleyrand. These were strong and loyal words, and they were fortified by a corresponding declaration from the Duke of Wellington, who, whatever may have been his private failings, was conspicuous for uprightness and for truthfulness. Referring to his own frequent and intimate trans-actions with Talleyrand, from the time of the Vienna Congress down to the date at which he spoke, the Duke said that no man could have conducted himself with more firm-ness and ability with regard to his own councommunications with the Ministers of other countries than Prince de Talleyrand. The Duke added that he felt himself bound to proclaim his sincere and conscientious belief that no man's public and private character had ever been so much belied as had that of the individual in question. The avowals of respect made by such distinguished English-men on this occasion have been made the

most of by the apologists for Tall-yrand. We should point out to the publishers that the usefulness of this volume to historical students is materially impaired by the lack. not only of an indax, but of a table of contents. in which the subjects of particular letters are referred to the pages on which they may be found. The English translator and American editor have not even taken the trouble to place at the head of a page a caption indicative of the matter presented thereon. In the complete absence of such facilities for consulta tion, a book must be regarded as printed rather than published.

Ancient Egypt. FIRST NOTICE.

The Mesars. Scribner have published a new and the roughly revised edition of the most important product of modern historical scholarship, Epopt Under the Pharacha, by HEINRICH BRUGSCH-BEY Certain parts of the original work are omitted from the present monuments, the discovery of the site of Pithon having proved the author's theory to be no longer tenable. The position taken with regard to the nationality of the Bubastites has been adjusted to the author's present view and the whole text has been corrected so as to bring it into conformity with the latest discoveries of Egyptologists Completeness is given to the vol-ume by the addition of a notice of the royal mummies of Deir-el-Bahari and of the re-markable "find" in February of the present year. Thus enlarged, the work of Brugsel Bey affords the fullest and most authentic account of ancient Egypt which is as yet de-

rivable exclusively from the monuments.

A preliminary word as to the system of chronology adopted in this book. Where does Brugsch fix the beginning of Egypt's historical era? It is, of course, understood that Egypt had a prehistoric age which witnessed considerable development of society and the dawn of the arts and sciences. But concerning this period, the monuments, apart from the myths recorded on them, reveal nothing The question is narrowed, therefore, to ascertaining the time at which the first sovereign acknowledged to be historical, namely, Mena. or Menes, the first Pharach of the first Thinite dynasty, ascended the throne. It is well known that even with regard to this date German Egyptologists have differed to a tolerable extent. Boeckhascribing the accession of Mena to 5702 B. C., and Bunsen to 3023 B. C., the diference between these extremes being no less than 2.079 years. It is as if one should hestthe time of Hannibal, or to the time of Bismarck. Brugsch, for his part, follows a middle course, believing that Mena, the first King of the first Thinite dynasty, began to reign in 4455 B. C.

Although authentic Egyptian history must begin with Mena, the human mind rebels against such an arbitrary starting point, espe-cially in view of the evidence that a considerable advance toward civilization must previous-ly have been effected. Recourse must accordingly be made to conjecture, assisted by suc dim light as the sciences of ethnology and comparative philology may throw on the origin of the inhabitants of the Nile land and the early stages of their upward progress. The Egyptians themselves held the belief that they were autochthonous, but that is not the conclusion to which the researches of ethnologists and philologists would point. Brugsch agrees with those who think that so far as weight may be given to ethnological considerations, the Egyptians should be regarded as a third branch of the Caucasian race, the family called Cushito. He also deems it not merely probable but certain, that in the earliest age of humanity, far beyond all historical remembrance, the Egyptians, for reasons unknown to us, left their early home, and taking their way toward the setting sun finally crossed the Isthmus of Sues to find a new fatherland on the banks of the Nile. It is pointed out that comparative philology in its turn gives powerful support to this hypothesis, for the primitive roots of the Egyptian language and the essential elements of its grammar exhibit such an intimete connection with the Indo-Germanic and Semitic languages that it is scarcely possible to dispute the former existence of close relations be-

tween them. From what we have just said it is evident that Brugech repudiates the Greek tradition

that the primitive abode of the Egyptian peo-ple should be sought in Ethiopia, and that the honor of founding their civilization should be given to a band of priests from Meros. Ac-cording to the Greek legend, these priests de-scending the Nile settled near the later city of Thebes and established the first state with a theoretic form of government. It is not, Brugsch says, to Ethiopian priests that the Egyptian empire owed its polity and its high civilization; much rather was it the Egyptians Egyptian empire owed its polity and its high civilization; much rather was it the Egyptians themselves that first ascended the river to found in Ethiopia temples, cities, and fortified places, and to diffuse the blessings of a civilized regime among a rude dark-colored population. On the assumption that Egypt was indebted to her civil and social development to Ethiopia we should justly expect to encounter monuments of the greatest pect to encounter monuments of the greatest antiquity in that primitive home of the Egyp-tian, whereas in going down the river we ought to light only upon monuments of a later age. The fact is precisely the reverse. All the buildings in stone as yet discovered and examined, which were erected on both sides of the river by Egyptian and Ethiopian Kings, furnish incontrovertible proof that the long series of temples, cities, sepulchres, and monuments in general exhibit a distinct chrono logical order, of which the starting point is in the pyramids at the apex of the Delta.

Before marking what Brugsch has to say

about the grade of civilization which con-fronts us at the very dawn of Egyptian his-tory, some reference should be made to the geographical and ethnographical terms found on the earliest monuments. The Nile Valley is designated in the old inscriptions, as it is among the later native Christians, by the word Kamit, signifying "the black land," and obviously suggested by the very dark color of the soil. The neighboring region of the Arabian desert bore the name of Tesherit, or "the red land." On countless occasions the King is mentioned as the "lord of the black country and of the red country." in order to show that his rule extended over both Egypt proper and its relatively sterile dependencies. Another significant name applied to Egypt on the old monuments is Tamera, which seems to have meant "the country of the inunda-tion." To the west of the Nile Valley dwelt groups of tribes which bore the general title of Ribu or Libu. These were the ancestors of those Libyans now represented by the Ber-bers, but who then inhabited the whole northern coast of Africa as far as the Canopic branch of the Nile. It is plain from the testi-mony of the old Egyptian monuments that the Libu or Libyans were a light-colored race, with blue eyes and blond or red hair. As early as the time of the fourth dynasty (3733-3506), members of this blue-eyed race wan-dered into Egypt to display their dexterity as dancers, combatants, and gymnasts in the public games. We come next-to the conglomeration of tribes inhabiting the wide regions of the upper Nile, and having on the monuments the common name of Nahasu. In the representations of them may be recognized the ancestors of the negro race. If, finally, we turn eastward, and look across the Isthmus of Suez. we discern branches of the great peoples collectively designated by the Egyptians un-der the name of Aamu. These were the pagans or infidels of the old Egyptian records. In the colored delineations of them they are listinguished chiefly by a yellow or yellowish brown complexion, while their dress is sometimes of great simplicity, but sometimes shows a taste for splendor and richness in the care-fulness of cut and the variegated patterns woven into the fabric. In these Aamu scientific research has recognized members of the great Semitic family of nations. It is, more-over, an established fact that even in the most glorious times of the Egyptian monarchy the Aamu were permanently settled in the neighmany places formerly bore unmistakably Semitic names. Among the Aamu peoples who appear in Egyptian history as commanding respect by their character and their deeds are the Katta (Hittites), the Khar (Phœnicians), and the Ruten (Syrians).

Much of our knowledge of the earliest historical era is due to the fact that the land on both sides of the river was from primitive times divided into districts called nones. This division is found on the monuments of the fourth dynasty, and thirty-three centuries later the same districts appear on Ptolemiac and Roman monuments. To the rigid system of local self-government is largely due the perpetuation of Egyptian usages and institu-tions. Each district had its own capital and volume, including particularly the essay on its own local governor, whose office passed son on the mother's side. Each discult, and from the sacred lists which were studiously kept up we learn the names of the temples of the chief diety, of the priests and priestesses, of the sacred trees, and also the names of the town harbor, of the holy canal, the amount of cultivated land, and the area of the soil which was only fruitful during the inundation. From this and much other information furnished by the registers of the nomes we are able to form a trustworthy picture of early Egyptian life in all its details. We learn that the husbandman, the shephord and boatman were the first founders of the advanced civilization which flourished in the Nile Valley. The ancient inhabitants, like their descendants, were for the most part an agricultural people. Thousands of bas-reliefs and explanatory inscriptions on the walls of aspulchral chapels give abundant disclosures respecting the labor of the field and the rearing of cattle. On certain festival days the Pharaohs themselves sailed along the sacred river in a gorgeous royal ship to perform mystic rites in special honor of agriculture. The priests regarded the plough as a most holy implement, and held that the highest happiness of man after the completion of his pligrimage on earth would consist in tilling the Elysian fields, in feeding and tending its cattle and navigating the breezy water of the other world in splendid skiffs. Yet, although the basis of the European civilization was agriculture, there was reared upon it an imposing superstructure. From a very early period stone was wrought according to the rules of an advanced skill, and such metals as iron, copper, silver, and gold were melted and wrought into tools or works of art. In daily use, too, were wood, leather, glass, flax, and rushes, while on the potter's field vessels were formed from the Nile mud and baked in the furnace. Sculptors and painters also found profitable work among the wealthy patrons of art at the court of the Pharacha.

IL.

Brugsch does not concur with those writers who have been inclined to see in the Egyptians a reflective, serious, and reserved people, very and caring nothing or but little about this mundane life. He deems it inconceivable that such a country and such a climate could have produced a face of living mummies and sad philosophers, a people who regarded this life as a burden to be thrown off as soon as possible. On the contrary, his conviction is that no people could be gayer, more lively of more childlike simplicity, than the old Egyptians who loved life with all their hearts and found the deepest joy in mere existence. Far from longing for death, they addressed to the host of the holy gods the prayer to preserve and lengthen life to the "most perfect old age of 110 years." The song and dance and flowing cup and cheerful excursions to the meadows and papyrus marshes for the purpose of hunting with bow and arrow or throw-stick, or of fishing with speak and hook, were the recreations of the higher classes after work was done. As proofs of a merry disposition are cited the humorous jests and bright sallies of wit, not always marked by de-corum, which characterized the people from age to age. Moreover, although ambition and arrogant pride formed a conspicuous feature in the spirit of the old dwellers on the Nile, yet their custe system lacked the iron rigor which prevails in India. In the ancient Egyptian schools the poor scribe's child sat on the same

schoolmasters knew how to goad on the lag-gards by holding up to them the re-wards awaiting rich and poor alika. Many a monument consecrated to the memory of some nobleman, who during life had held high rank at the court of Pharsoh, bears the simple but laudstory insortption.

"His ancestors were unknown people." Above all things, the old Egyptians esteemed justice, and virtue had the highest value in their eyes. The law which next to the order to pray to the gods and hones the deed placed the injuncthe gods and honor the dead placed the injunc-tion to give bread to the hungry, water to the thirsty, and clothing to the naked, reveals one of the finest qualities of the old Egyptian character—pity toward the unfortunate. According to Brugach, the forty-two command-ments of their religion which are contained in the "book of the dead" are not inferior to the precepts of Christianity, and in reading the old inscriptions concerning morality the author has been tempted to believe that Moses modelled his teachings on the patterns given

by Egyptian sages.

There is, of course, a dark side to the pic ture. Brugsch does not fall to point out that a long series of hereditary faults, to wit. hatred, envy, cunning, intrigue, avarice, and oruelty, is revealed to us by Egyptian history in innumerable examples. Neither did the rule of the Pharsons open to the naturally light-hearted inhabitants of a fruitful land the gates of earthly paradise. Not seldom did the people writhe under the oppression of their rulers, and the stick habitually quickened in the despatch of business between the peasant and the tax gatherer. The gigantic masses of the Pyramids bear more emphatic witness than could any written words to the miseries of a whole population condemned to rear these everlasting memorials of Pharaohonic vanity. When Herodotus, thirteen centuries later, visited the pyramids of Gizeh the Egyptians told him of the imprecations wrung from their unhappy forefathers during the erection of those monuments.

HIV. The first two Pharachonic dynasties are termed Thinite, from the town called by the Egyptians Tini and by the Greeks Thinis. It was the ancient motropolis of the eighth nome, and, lying near to Abydos, formed in later times only a separate quarter of that city. Both cities have now vanished, but their memory is preserved by the necropolis and eplendid sanctuaries raised by the Egyptians on the border of the neighboring desert. Although, however, Tini remained the hereditary seat of the first two dynastics, Mena, or Menes, the very first historical sovereign of ancient Egypt, is credited with the foundation of Memphis, which, under the third dynasty, became the splendid capital of the Old Empire. According to tradition, Mena diverted the course of the Nile in order to gain a wide space for the new city. By the construction of an enormous dike the previous channel of the river along the Libyan hills was cut off and the bed, thus left empty, was

permanently filled up. We are told that Linant-Bey is convinced that the existing great dike of Cocheiche is the same which Mena caused to be constructed more than six thousand years ago. The chief name of Mena's city was also that of the nome in which it was situated, viz., Ambu-hat, or "the white wall." It commonly bore, however, the title Memmeler. "the good place," which the Greeks altered to Memphia. The last trace of the old name is preserved in Tell-el-Monf, the modern designation of a mass of ruins close to the former royal residence of the first Pharaoh. All that is now left of this celebrated city consists of heaps of overthrown and shattered columns, altars, and sculptures once belonging to the temples, and of a far extended line of mounds of débris. It seems, however, from the writings of Abd-el-Latif, an Arab physician of the thirteenth century, that in the middle ages the remains of the once great city of Memphis were still so well preserved that their materials and the perfection of their workmanship excited the excepations which in our own days have been undertaken on the site of Memphis have given results hardly worth naming, for the immense masses of stone used in the building of the temples had been in the course of time transported to Cairo to supply the materials eeded for the mosques, palaces, and houses of the city of the Fatimite caliphs.

Along the margin of the desert, extending from Abu Arosh as far as Meldum, lay the necropolis of Memphis, where were buried the contemporaries of the third, fourth, and fifth dynasties. Their memthe relation of the exodus to the Egyptian by inheritance, according to the old Egyptian ories have been kept alive by pictures nd writings on the walls of the sacrificial chambers built over their sepulchres. The Memphite tombs tell much concerning the customs of Pharach and his court under the Old Empire. Besides bearing the title of King of the upper and lower country, the sovereign was also called Per-ao, "the great house better known under the Hebrew equivalent of Pharach. The people honored him not only as lord (neb), but as a god (neter). At sight of him every native prostrated himself and touched the ground with his nose, and it was an especial favor if the .command of . his lord permitted him only to kiss his knee. The King was spoken of as his Majesty, or briefly by a word equivalent to the German word man. At the court of the old Pharaohs rank and precedence were minutely defined as well for the nobles of the purest descent as for the mass of busy servants. High birth conferred upon the nobles dignity and authority in the eyes of the people, but far greater weight was given to wisdom, culture, and virtue. The administration of the country was conducted under Pharach's direction by a governor and bailiff and a countless host of scribes, while the duties of personal attendance upon the chief were performed by inferior officials controlled by the high steward. Boys of relatively humble birth, if distinguished by early intelligence, were associated with the King's children as their companions in lessons and at play. There was a special officer on whom devolved the responsibility for the bodily health, the education, and the discipline of the royal progeny. The Queen and the other ladies of the royal family lived in the women's houses." guarded by free men the Princesses to ally themselves in marriage with some of the great nobles. It is a fact to be noted for its bearing on Egyptian history that Ba-en-Neter, the third King of the second dynasty. had apparently no sons, enacted as a standing rule forever that women should inherit the throne. The operation of this law caused many dynastic changes, either when the Queen upon her husband's death took in her own hands the reigns of government

usurped the place of her youthful son, or when the daughter and heiress of a deceased Pharach, who had left no sons, gave her hand to a foreign husband. At all times in Egytian his tory the mother's pedigree had great weight in the order of inheritance; it gave an unconditional claim to the son as the true heir of the father of his mother." The husband of a royal heiress was a King in name only, but on the son of such a marriage devolved a full right to the throno by virtue of his maternal descent. If a Pharach, however, married the daughter of a family not of royal race, the offspring of such a union, as appears from many incidents in Egyptian history, did not possess equal rights with the true royal children.

The inhabitants of the rural districts were

kept in order by governors of nomes. The Judges enforced strict obedience to the written law and administered justice to the oppressed, whose complaints it was the duty the King's deputies to hear. The duty of attending to buildings and all kind of work in stone belonged to skilled persons of the noble class. In the caverns of the mountain of Turah, opposite to Memphis, they quarried limestone for the royal pyramids and tombs and for the artistic work of the sarcophag and columns, or, resorting to the more south ern region, they howed out the hard granite

soum, and constructed rafts for the convey-ance of the huge blocks of stone to the lower country in the season of the inundation.

The soldiers, who for a long period consisted

xelusively of infantry, were equipped with clubs and axes, spears, and bows and arrows, and were commanded by experienced gener-als. As now in the case of China, the literary class was scarcely less important than the military. The scribes were divided into many categories, according to their position and business. In obedience to the commands of their master they either set down the events of his domestic life, or accurately recorded his income and expenditures and kept his books in good order. Far above the ordinary scribes were ranked the so-called teachers of mya-teries, the custodians of all hidden wisdom in those ancient times. The "mystery teachers of heaven" were astronomers who investigated and expounded the course of the stars. The "mystery teachers of all lands" seem to have been the geographers of the primitive world. The "mystery teachers of the depth" were credited with knowledge of what the earth conceals in its profundities, and they made a study of the nature of the Egyptian soll. Others, "mystery teachers of the secret word," wrote books or subjects of deep speculation, while the "mystery teachers of the sacred language" devoted themselves to the study and exposition of the Egyptian tongue. One reads, also, of "mystery teachers who examine words," doubtless learn-ed men or judges who listened to complaints and compared the evidence of the witnesses.

In a word, the welfare of the court and country under the old empire was secured by an elaborate adjustment of classes and specialization of individual effort. Every one naintained his place, not as was once supposed. according to his caste, but mainly according to his personal worth. It was, however, blind

obedience to the will of Pharaoh which, as a rule, assured the harmonious working of the rhole machinery. No glimpse of this complex and interesting world, at last awakened from its sleep of more than 6,000 years, should omit to note the testimony that the writings of the Pharachs of nedical subjects reached back as far as the first dynasty. Mena's son and successor. Teta. who built the royal palace in Momphis, was a physician and wrote a work on anatomy. A papyrus record of the most remote age bought in Thebes by Ebera, tells in archalo language that when King Teta sat on the throne a prescription for making the hair grow was much commended. The long medical papyrus found in the necropolis of Memphis and now in the Berlin Museum, contains prescriptions for the cure of malignant leprosy and many other kinds of illness; it treats also of fractures, and discourses, although in a simple childish way, of the construction and mechan-

ism of the human body. Though composed in the reign of Rameses II. (B. C. 1833) there is a passage in it which throws back the origin of one part of the work to the lifth king of the first dynasty, B. C. 4206.

IV.

It is well known that those wonders of the ancient and modern world, the three great pyramids, belong to the era of the fourth With the founder of that dynasty and the builder of the largest pyramid, Khufu, the Cheops of Herodotus, begin those traditions of Egyptian history which are recorded by Greek and Roman authors. The principle on which the enormous masses of the pyramids were constructed was long an nsolvable enigma even to experts in engineering. We now know that no sooner did a Pharsoh of the fourth dynasty mount the throne than he immediately began building his tomb. The kernel of the future edifice was raised on the limestone soil of the desert in the form of a small pyramid built in steps, of which gerninal structure the carefully fashioned and well fitted interior was to form the king's eternal dwelling. A covering was added to the outside of the kernel, followed by a second and some-times even a third and fourth; and when at last it became almost impossible to extend further the area of the pyramid, a casing of hard stone, polished like glass and fitted accurately to the angles of the steps, completely covered the gigantic building. The stones for the pyramid were taken from three different places. The innermost material, a spongy limestone without consistence, was found close at hand. A firmer sort of stone, selected for the steps and the successive layers, was brought from Turah upon rollers along the the Nile, immediately opposite to that mountain, to the plateau of the pyramids. The covering of the latter was of costly stone brought down the river from a great distance. On the southern border of Egypt, close to Assouan, stands the "Red Mountain" composed of a granite, sprinkled with black and red, as hard as iron and shining beautifully when polished. The brilliancy and durability of this syenite made the stone especially coveted by builders. Quarry marks of very ancient times are still visible in the "Red Mountain." Here we meet with the outline of a colossal statue, and there the whole length of the fourth side of an obelisk still waits to be loosened from its bed. We learn from inscriptions that ten years passed before the workmen had quarried the stones for the pyramid of Cheops in the Mountain of Turah, had laid the foundation and closed the dark tomb chamber in the rock, and twice ten years more

elapsed before the whole work was completed. A later member of the fourth dynasty, Khaf-Ra. was the Khefren. or Chephren, of the Greeks. It is curious that his pyramid should have been designated by the ancients as "the Great," for it is slightly inferior in height to that of Cheops, and considerably inferior in breadth. Of Khaf-Ra the stones say little, but his name is well preserved through the wonderful workmanship of his statues. Apropos of these, we are reminded that it is only a few years ago when close to the Sphinx was discovered a building which is still a mystery. In one of its spacious halls was disclosed a shaft of a well into whose depths a number of statues of Khaf-Re had been hurled. The great-er number of them had been destroyed by the fall, but one had survived—the figure of King Khaf-lia in a sitting posture. The author deems it impossible to overrate the historical value of this statue, which is, it seems, of regal appearance, clothed with dignity in look and bearing. Like the wooden status of Sheikh-el-Belied, brought to light out of the tombs at Sakkarah, and also attributed to the fourth dynasty, the statue of Khaf-Ra bears the stamp of an admirable art. and teaches us that at nearly the dawn of what we call history the Egyptians had made an approach to artistic perfection which they never

afterward exhibited.
Almost in the same line with Khaf-Ra's pyramid lies the colossal Sphinx—the body of a lion united with the face of a man. Between the outstretched forepaws of the Hon once led a narrow path to the temple, which stood at the breast of the monster. It is well known that the lion was hewn out of the living rock, but, where hollows in the stone interrupted the rounding of the body, light masonry was introduced to fill in what was wanting in the form. An inscription testifies that King Khulu had seen the Sphinx; therefore it must have existed before his time, 3733-3700. The third pyramid, erected by another king of the fourth dynasty, Men-kau-Ila, the Myceripus of the Greeks, was called by the Egyptians "the high one." although the height is but 203 feet, and although the ratio of the height to the breadth is considerably lower than in the case of the pyramids of Cheops and Khephren. When Col. Howard Vyse discovered in this pyramid the well-guarded en-trance to the chamber of the dead, and entered the room "of eternity." he saw. as the last trace of the burial of Mycerinus, the wooden cover of the coffin and the stone sarcophagus bewn out of a single block and beautifully ornamented outside in the style of a temple. Sent to London. the sarcophagus sank with the ship that car-

ried it to the bottom of the sea, but the coffin

containing the mummy was saved, and is now

testimony. Mycerinus had the reputation of being a mild and just man, and it may be in-ferred from a statement to the "Ritual of the Dead," buried with every mummy, that he industriously studied the religious writings of

W.

certing the Pharacha of the fifth dynasty. One member of this line, however, Assa, had a son called Ptah-hotep, of whom a record worthy of remembrance is preserved in an ancient papyrus, now in the National Library at Paris. This is, without doubt, the oldest manuscript in existence, dating as it does from about the year 3008, according to the present author's chronology. It contains wise instruction and admonitions, praises the practice of virtue and good manners, and points out the path which leads to honor and a happy end. The King's son must have been very aged when he wrote this book, for he speaks of decrepit old age as one who felt it himself. "The two eyes," thus writes Ptah-hotep, "are drawn small, the cars are stopped up, and what was strong becomes continually weak. The mouth becomes silent, it speaks no clear word; the memory is dulled, it cannot recall past days; the bones refuse their service. The good has changed to bud. Even the taste is long since gone. In every way old age makes a man miserable. The nose is stopped with-out air." After unfolding some of his deepest thoughts in very simple language, Ptahhotep adds: "If thou hast become great after thou hast been lowly, and if thou hast amassed riches after poverty, so that thou hast become because of this the first in thy city, and if the people know thee on account of thy wealth and thou art become a mighty lord, let not thy heart be lifted up because of thy riches, for the author of them is God. Despise not thy neighbor who is as thou wast, but treat him as thy equal. * * Let thy countenance shine joyfully as long as thou livest; did a man ever leave the coffin after having once entered it? Rather more is known about the sixth than about the fifth dynasty, and it includes one interesting figure, that of the Queen Nitaquert, or Nitooris, who, according to Manctho, was of a fair complexion and the most beautiful woman of her time. It seems probable that after the death of her predecessor Egypt was split up into petty kingdoms afflicted with civil wars and toyal murders, and that for some time no deliverer alone strong chough to put down insurrection and to consolidate the monarchy. Herodotus says that the King of Egypt, brother of Nitooris, was killed by conspirators, who, however, gave the crown to her; whereupon she preceded with subtlety to avenge her brother's death, for she constructed a vast underground building, and on the precent of its inauguration invited the principal authors of the murder to the feast. During the repast the river was let into the chamber through a hidden channel so that the whole party of banqueters was drowned. After she had accomplished this she plunged into a chamber filled with ashes and thus killed herself in order to escape the vongeance of the friends of her victims. According to Manetho, Nitocris was the buildur of the third pyramid, the same which Mycerinus had prepared for his own resting place about 600 years before, according to the litugesch chronology. It has been proved, havever, by careful investigators that this pyramid, which contains two tombs, was enlarged in later times: so it is not impossible that Queen Nitocris altered it, and, having left the body of Mycerinus in the lower chamber, directed nor own body to be placed in the sarcophagus of biue basalt contained in the upper one.

A period of confusion followed the death of Nitocris and extended through most of the reigns of the kings belonging to the seventh, eighth, ninth, tenth, and eleventh dynastics, or, in other words, from B. C. 2483 to R. C. 2486. An incident, however, of great historical importance helongs to the kings belonging to the seventh dynasty. We refer to the first recorded voyage Rather more is known about the sixth than about the fifth dynasty, and it includes one

There is ground for the surmise that during the anarchic period covered by the dynasties VIL-XI., a tendency showed itself to transfer the seat of government from Memphis to Thebes, perhaps with the view of obtaining greater security from foreign inroads through the isthmus of Suez. At all events, with the accession of the twelfth dynasty (B. C. 2408, ecording to Brugsch), we find a Thoban sovereign in complete possession of the mon-

archy. The two centuries comprehended by the reign of the twelfth dynasty were marked by an extension and fortification of the frontiers and by a remarkatio consolidation and regeneration of the State. To this expect a multitude of statues which bear witness to the revival of art, but the famous labyrinth which, according to Herodetus, contained \$0.00 halls and enambers, and the great reservoir known as Lake Moeris, constructed for the purpose of storing and distributing the waters of the Nile. The investigations of Linant-Bay have proved that this artificial lake lay in the sense sense that the satisfication of the storing and distributing the waters of the Nile. The investigations of Linant-Bay have proved that this artificial lake lay in the sense leaster part of the Ryll and the utmost care was taken to divert into it the surplies waters of the Nile at the time of the investigation, Just as in our day the rising of the river is telegraphed from the most southern point attaination by the Knellve's Government to Cairo in order that preparation well the division of the river is telegraphed from the most southern point attaination by the Knellve's Government to Cairo in order that preparation. Thence the new was desputched to the lowerlying districts, On the rocks of observation. Thence the new was desputched to the lowerlying districts, On the rocks of seningh and Tummeh the highest point of the year's inuation was laws noted for comparison, and the mark was accompanied by a corresponding inscription. From observations made by the contures ago, the nightest rise of the river was nearly twenty-seven feet, niowe the greatest height of the linear that epoch aurnass of the tower the average height of the Nile at that epoch aurnass of the comparison of the former of the twenty of the Nile at that epoch aurnass of the twenty of the Nile at that epoch aurnass of the twenty of the conture of the cont

The fact is well known to engineers and metallurgists that the tensile strength of copper decreases to a very considerable extent with a rise in the temperature, and, on this Comparatively few facts are registered con-

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account, copper steam tubes are liable to cause accidents of a serious character. In view of this the Fairfield Shipbuilding and Engineerthis the Fairfield Shipbuilding and Engineering Company of Govan. Bagland, recently undertook a series of practical experiments with the object of strengthening copper steam tubes by laving wire colled around them. As Delta metal is known to loss comparatively little in strength with increasing temperatures, as shown by Prot. Unwin's interesting experiments and tests in this like, the above-named company jested Delta wire against copper, both sold and at the temperature of melting tin, namely, 442 degrees. The result in these various trials confirmed in an unquestionable manner the greater atrength so long claimed for the Delta metal, it proving in every instance superior to copper.

Official details of the great dam at Beetaloo, Australia, correct some of the previously pub-lished statements and figures, and the immensity of such a piece of engineering work nay well challenge comparison with anything of the kind in that part of the world. The structure is of concrete, 110 feet high from the bed of the creek to the top of the dam, and 580 bed of the creek to the top of the dam, and 580 feet long, being curved in plan to a radius of about 1,400 feet; the width of the top is 14 feet; the profile of the section being designed in accordance with Bankine's rules, and the width of the section at the foundation is 110 feet; the great of the by-wash, which is 200 feet wide, is five feet below the creet of the dam; and the reservoir behind the dam at its full one and one-fourth miles long, with an average width of eight chang. The capacity, under these conditions, is 900,000,000 gallons, for the supply of a district covering an area of 1,700 square miles, including sight separate townships, &c. The quantity of concrete used was 80,000 cubic yards, the not time occupied in construction being about two and one-half years. Special machinery was used for mixing the concrete and depositing it in place, and the whole work is regarded as a most creditable achievement.

Glasgow will, it is claimed, insure the quickest possible transit of the Atlantic Ocean attainable by steam craft. With a length of 630 feet. and 70 feet beam, very fine lines are obtained. and the twin screws are of some twenty-three feet diameter, well supported. There are four feet diameter, well supported. There are four funnels, and about two hundred feet of the length of the ship is devoted to the boilers and bunkers. The engines, triple compound, with four cylinders working four chanks, are figured at 33,000 horse power. Accommodation is provided for some 700 first and 300 second-class passengers and about 400 emigrants, and all the arrangements worked out in the plans for carrying out this important features are far ahead, it is claimed, of anything yet produced in nautical construction. The plating of the ship is carried up to the promenade deck, which runs from end to end, and about twenty feet on each side is left for walking.

A method has been devised for treating flax. chins grass, and similar plants, the obstinate nectic matters of which are displaced by a fatts acid which takes their place on the fibre, and is itself capable of being easily removed therefrom. The goods are deposited in a boller or kier and bolled one or two hours with boller or kier and boiled one or two hours with soap, after which a quantity of sal ammonias, equal to one-third of the weight of soap employed, is added. Under these circumstances decomposition or dissociation is the result, the soap in the liquid decomposing into alkali, glycerine, and fatty acid. The last fixes upon the fibre dissolves, and sets at liberty the resinous matters which rise up to the surface of the liquid. The effect of the giverine is to dissolve the lime and other metallic salts, and, after the space of two or three hours, the fibres are found to be free from rosin, but are filled with the fatty acid of the soap. The goods are now subjected to a treatment with soap of a slightly alkaline nature to dissolve off the fatty acid.

Some attention has been directed to a proposed substitute for the ordinary steam ham-mer, vis., an electro-magnetic hammer, in general design similar to the steam apparatus -the novelty in this case consisting in the substitution of electro-magnetic power for that of steam by a slight and very simple modification of the usual mechanism. The piston is of magnetic material, and the crilinder is composed of a series of collis. through each of which an electric current may be passed separately; the passage of an electric current through the colls forming the upper part of the crilinder raises the piston into the magnetic field thus created, and, by sutting off the turrent and simultaneously transferring it to the lower coils of the cylinder, the piston is released, its descent being accelerated by the magnetic struction created below. As a magnetic field can be produced in any of the series of coils the blow may of course be readily shortened or lengthened as desired; and the current is controlled by levers and connections identical with those used on an ordinary steam hammer—in fact, the absence of the steam pipe is she cally feature distinguishing this new machine from the common steam hammer.

An improvement in the preparation of jubrice modification of the usual mechanism. The

An improvement in the preparation of lubricants is described by Krause, a German chemwith alkaline lye is dissolved in water and filtered, and to this a solution of alum or other alumina salt is added, the result being the formation of a brown precipitate, and this is called aluminum-labolate. With this subcalled aluminum-ianolate. With this substance, when dried, lubricating oils of any degree of viscosity desired may be produced by
dissolving it in any fluid mineral oil. It is also
found that, if dissolved in a email quantity of
mineral oil, a gelatinous substance is obtained
wateh may with considerable advantage be
mixed, in suitable proportions, with in its
rabber are said to be also selvents for aluminum-ianolate. In textile in-instrict his sucstance may be used as a scouring agent.

One of the new names in practical engineering chemistry is that of parametrophenol. and it may yet play an important part in a certain specialty. As is well known, water containing magnesium chloride is injurious to boilers, as the salt dissociates with the production of hydrochloric sold which attacks the plates and though, in large installations, where systematic purification of the feet water can be adopted, this evil is preventable, in most opses the treatment in vogue consists in adding caustic soda to keep the contents of the bodier calkalline; an excess of the soda, however, is wasteful, as well as otherwise objectionable, and it becomes desirable to a scartain riselity when the water in the bodier crace to contain alkall and noe is a further supply. Dr. Goldberg has found that the sodium sait of paramirophenoi is entirely unaffected by the saits commonly present in feed waters—the chalm being that it is possible, by introducing a sufficient quantity into the bodier, to judge of the alkalinity or relatity of its contents at any given moment by merely blowing the water out of the gauge slass and allowing it to reflix To gives a clatinet yellow color—the evaluation of alkalinity—to the water, so that it may be seen in the small quantity of water in the gauge glass, about thirty to, firly grammes per cubic metre are concluded. It is remarked that, though the high price of the article is a bar to its general use at present, still as its successful application is not dependent on its puritis a crude variety could doubtless be produced much more cheaply. and though, in large installations, where sys-

A short time ago Mesars. Mondand Frinckee discovered that nickel combines with carbon monoxide to form a nickel-carbon oxide, which promises to be useful in connection with the development of nickel plating. At that time, however, the investigators failed to obtain any similar compound of carbon monobtain any similar compound of carbon monoxide with another metal, and, considering it remarkable that nickel anould be the only metal capable of entering into combination with this particular gas, they persisted in their exputiments, more especially with iron, under very varied conditions; they succeeded at last in demonstrating the fact that iron is volatilizable, although apparently in very small quantities, in a current of carbonic oxide. This result was communicated to the Chemical bodiety, and published in its official invocedings, they facts being, in brief, that some finely divided from was volatilized in a current of carbonic oxide at ordinary temperatures and that the deposits from this process give all the known reactions of fron in remarkably brilliant colors. Further researches are expected to establish the conditions under which such action can take place.

In a lecture delivered at the College de France. M. Marey exhibited to his audience specimens of the remarkable precision attained by some of his latest inventions in the region of scientific photography. Hitherto it has been known to be possible to produce a has been known to be possible to produce a series of negatives showing the movements of a bird on the wing, but for more rapid motions the existing apparatus has proved too slow, producing only blurred impressions. As an example, in order to photograph clearly an insect flying, it is essential that the exposure should last only the 1-25,000th part of a second, and this M. Marey accomplished with a new postrument of which he is the inventor. M. Mayey concluded his demonstration by still further reducing the period of exposure, and photographing successfully the blood globules circulating in a vein.